8th Grade Science Curriculum Guide

<table>
<tr><th>Week</th><th>Standard</th><th>Major Concept/Topic</th><th>mPossible Resources</th><th>Vocabulary</th></tr>
<tr><td>Week1</td><td></td><td>Beginning of the year skills including lab safety, notebook set up and expectations.</td><td>Lab Safety Rap:
https://www.youtube.com/watch?v=xJG0ir9nDtc</td><td></td></tr>
<tr><td>Week 2</td><td><table><tr><th>Standard</th><th>Cognitive Level</th></tr><tr><td>SC.8.P.8.2</td><td>2</td></tr><tr><td>SC.8.P.8.3</td><td>2</td></tr><tr><td>SC.8.P.8.4</td><td>2</td></tr><tr><td>SC.6.P.13.1</td><td>2</td></tr></table></td><td>Differentiate between weight and mass recognizing that weight is the amount of gravitational pull on an object and is distinct from, though proportional to, mass.

Explore and describe the densities of various materials through measurement of their masses and volumes.
Include:
Density does not change with size of the sample.
Use density formula to calculate density, mass or volume when comparing substances.
Classify and compare substances on the basis of characteristic physical properties that can be demonstrated or measured; for example, density, thermal or electrical conductivity, solubility, magnetic properties, melting and boiling points, and know that these</td><td>Textbook: Unit 6 Lesson 1 (pages 306-319)
Unit 6 Lesson 2 (pages 322-335)

Essential Lab:
Seven Layer Density Column pages 96-104
What’s the Matter Inquiry Lab pages 46-55 Part 1-2 This lab connects physical and chemical properties as well as mentioning mixtures. Part 3 begins Physical and Chemical changes.
Additional Resources:
BrainPop: Measuring Matter
Gizmos: Density; Weight and Mass
LAB: Crime Scene Density Lab (www.cpalms.org)
Density of Blocks Activity pages 217-221
Density of Rocks (Differentiated) pages 222-223
8th Grade Coach
Lesson 20 pages 114-118
https://www.flippedoutscience.com/unit-2---what-are-we-made-of.html
https://www.youtube.com/watch?v=MraHoI-Yik4&index=14&list=PLhz12vamHOnaY7nvpgtQ0SIbuJdC4HA5O</td><td>Matter
Mass
Weight
Density
Volume
Electrical conductivity
Solubility
Malleability
Luster
Boiling point
Magnetic attraction
Melting point
Thermal conductivity
Solvent
Solute
Saturation</td></tr>
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<td>properties are independent of the amount of the sample.
Investigate and describe types of forces, including contact forces and forces acting at a distance, such as electrical, magnetic, and gravitational.

Include:
● Density does not change with size of sample.

Exclude:
● Memorization of specific melting points or boiling points.
● Calculations for conductivity, solubility or magnetic properties.</td>
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<td>Week 3</td>
<td>CONTINUE

<table><tr><th>Standard</th><th>Cognitive Level</th></tr><tr><td>SC.8.P.8.2</td><td>2</td></tr><tr><td>SC.8.P.8.3</td><td>2</td></tr><tr><td>SC.8.P.8.4</td><td>2</td></tr><tr><td>SC.6.P.13.1</td><td>2</td></tr></table></td>
<td>Classify and compare substances on the basis of characteristic physical properties that can be demonstrated or measured; for example, density, thermal or electrical conductivity, solubility, magnetic properties, melting and boiling points, and know that these properties are independent of the amount of the sample.

Exclude:
● Memorization of specific melting points or boiling points.
● Calculations for conductivity, solubility or magnetic properties.</td>
<td>Textbook: Unit 6 Lesson 2 (pages 322-335)

Suggested Activity:
● A lab directed at understanding solubility is a physical property. A simple activity such as dissolving food coloring in a petri dish with water and allowing the water to evaporate. The food coloring is left behind.</td>
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District Common Assessment- Matter Unit Test 1

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<td>Week 4</td>
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<table>
<tr><th>Standard</th><th>Cognitive Level</th></tr>
<tr><td>SC.8.P.9.2</td><td>2</td></tr>
<tr><td>SC.8.P.9.1</td><td>3</td></tr>
<tr><td>SC.8.P.9.3</td><td>3</td></tr>
<tr><td>SC.6.P.11.1</td><td>2</td></tr>
<tr><td>SC.7.P.11.1-4</td><td>1,2,3,2</td></tr>
</table>
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<td>
Differentiate between physical and chemical changes.

Explore the Law of Conservation of Mass by demonstrating and concluding that mass is conserved when substances undergo physical and chemical changes.

Investigate and describe how temperature influences chemical changes.

Recognize that adding heat to or removing heat from a system may result in a temperature changes and possibly a change of state.

Investigate and describe the transformation of energy from one form to another.

Cite evidence to explain that energy cannot be created or destroyed, only changed from one form to another.

Observe and describe that heat moves in predictable ways, moving from warmer objects to cooler ones until they reach the same temperature.

Exclude:

Will not include mathematical computations of conservation of mass

</td>
<td>
Textbook: Unit 6 Lesson 3 (pages 338-349)

Essential Labs:

Physical and Chemical Changes in Matter pages 59-71
Alka Seltzer Rockets http://www.physics.org/interact/physics-to-go/alka-seltzer-rocket/index.html

Use cold, room temp and hot water. Record the data for temperature and rate of reaction. This will help cement the idea that heat speeds up the reaction (SC.8.P.9.2). This also will meet the Nature of Science standard for SC.8.N.1.1.

Additional Resources:

BrainPop: Property Changes
Labs: Baking Soda/Vinegar (www.cpalms.org) or Popcorn Lab
Precipitating Bubbles pages 237-253 (higher level ability and combined with Nature of Science lab write- up)
http://www.middleschoolscience.com/bag.htm

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<td>
Chemical change
Chemical reaction
Reactivity
Physical change
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<td>Week 5</td>
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<tr><th>Standard</th><th>Cognitive Level</th></tr>
<tr><td>SC.8.P.9.2</td><td>2</td></tr>
<tr><td>SC.8.P.9.1</td><td>3</td></tr>
<tr><td>SC.8.P.9.3</td><td>3</td></tr>
</table>
</td>
<td>Differentiate between physical and chemical changes.

Explore the Law of Conservation of Mass by demonstrating and concluding that mass is conserved when substances undergo physical and chemical changes.

Investigate and describe how temperature influences chemical changes.</td>
<td>Textbook: Unit 6 Lesson 3 (pages 338-349)

Essential Activity:
● Law of Conservation of Mass Lab
● Conservation of Mass pages 75-80, 83

Additional Resources:
● 8th Grade Coach
○ Lesson 27 pages 153-157
○ Lesson 25 pages 144-148
○ Lesson 26 pages 149-152</td>
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<tr>
<td colspan="5">District Common Assessment - Matter Unit Test 2</td>
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<td>Week 6</td>
<td>
<table>
<tr><th>Standard</th><th>Cognitive Level</th></tr>
<tr><td>SC.8.P.8.1</td><td>2</td></tr>
<tr><td>SC.8.P.8.9</td><td>2</td></tr>
</table>
</td>
<td>Explore the scientific theory of atoms (also known as atomic theory) by using models to explain the motion of particles in solids, liquids, and gases.
Exclude:
● colloid

Distinguish among mixtures, (including solutions) and pure substances.</td>
<td>Textbook: Unit 6, Lesson 4 - 5 (Pages 354-377)

Simulations: States of Matter

Additional Resources:
● Florida Standards-Based Instruction Coach Grade 8 Investigation 1 Separating Mixtures page 175-182.
● Mixtures, Elements and Compounds Sort https://docs.google.com/document/d/1UVuqlGaiBEyqnfOz5qRXXoWVbwqZWfJb4JI7_0Ip3-Qg/edit?usp=sharing</td>
<td>Particles
Solid
Liquid
Gas
Pure substances
Homogeneous
Heterogeneous
Mixture</td>
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<td>Week 7</td>
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<tr><th>Standard</th><th>Cognitive Level</th></tr>
<tr><td>SC.8.P.8.8</td><td>2</td></tr>
</table>
</td>
<td>Identify basic examples of and compare and classify the properties of compounds, including acids, bases and salts.
Include:
● Common examples of acids, bases and/or salts.
● Compare and contrast properties of compounds, including acids, bases and/or salts.</td>
<td>Textbook: unit 6, Lesson 5 (pages 364-377)

Essential Activity:
● http://old.coolscience.org/CoolScience/Teachers/Activities/CabbageJuice.htm
● Similar activity can be done with pH paper
● Florida Standards-Based Instruction Coach Grade 8 Investigation 2 Acids and Bases Activity page 183-190.</td>
<td>pH scale
Acid
Base
Salt</td>
</tr>
</table>

<table>
<tr><td></td><td></td><td>Exclude:
Knowledge of the specific pH of certain substances.</td><td>Additional Resources:
8th grade Coach-
Lesson 29 pg. 163-174
6th grade Coach-
Lesson 21 pg.128-131
Lesson 23 pg. 136-13
https://middleschoolscience.com/</td><td></td></tr>
<tr><td colspan="5">District Common Assessment - Mixtures, Elements Compounds and pH</td></tr>
<tr><td>Week 8</td><td><table><tr><th>Standard</th><th>Cognitive Level</th></tr><tr><td>SC.8.P.8.5</td><td>1</td></tr><tr><td>SC.8.P.8.7</td><td>1</td></tr></table></td><td>Recognize that there are a finite number of elements and that their atoms combine in a multitude of ways to produce compounds that make up all of the living and nonliving things that we encounter.
Include:
Particle movement in solids, liquids and gases.
Exclude:
Balancing equations
Analysis of chemical formulas
Chemical bonding
Explore the scientific theory of atoms (also known as atomic theory) by recognizing that atoms are the smallest unit of an element and are composed of subatomic particles (electrons surrounding a nucleus containing protons and neutrons).
Include:
Protons, neutrons and electrons only
Exclude:
Valence electrons
Electron configuration
Any chemical bonding</td><td>Textbook: Unit 6, Lessons 6 (pages 378 - 403)

8th Grade Coach: Pages 119 -122

Simulations:
https://phet.colorado.edu/en/simulation/build-an-atom

Additional Resources:
8th Grade Coach
Lesson 21 pages 119-122</td><td>Atom
Proton
Neutron
Electron
Nucleus
Atomic Number
Atomic Mass
Electron Cloud Model
Molecule
Chemical Bond
Compound</td></tr>
<tr><td colspan="5">District Common Assessment - Atoms Test/Quiz</td></tr>
</table>

<table>
<tr><td>Week 9</td><td></td><td>1st Nine Weeks Wrap UP and Review
1st Nine Weeks TEST</td><td></td><td></td></tr>
<tr><td>End of 1st Quarter</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Week 10</td><td><table><tr><th>Standard</th><th>Cognitive Level</th></tr><tr><td>SC.8.P.8.6</td><td>1</td></tr></table></td><td>Recognize that elements are grouped in the periodic table according to similarities of their properties.
Include:
Elements 1-57 and 72-89 only
Periodic trends at a conceptual level
Exclude:
Valence electrons</td><td>Textbook: Unit 6 Lesson 7 pages 392-403

Additional Resources:
8th grade Coach
Lesson 22 pg. 123-127
Periodic Table Scavenger Hunt</td><td>Periods
Groups
Families
Metal
Nonmetals
Metalloid</td></tr>
<tr><td colspan="5">District Common Assessment - Periodic Table Test</td></tr>
<tr><td>Week 11</td><td><table><tr><th>Standard</th><th>Cognitive Level</th></tr><tr><td>SC.6.L.14.1</td><td>1</td></tr><tr><td>SC.6.L.14.2</td><td>2</td></tr><tr><td>SC.6.L.14.3</td><td>2</td></tr><tr><td>SC.6.L.14.4</td><td>2</td></tr></table></td><td>Review cell theory, cell organelles and functions.
Include:
Organelles include: cell wall, cell membrane, nucleus, cytoplasm, chloroplasts and mitochondria
Difference between animal and plant cells
Exclude:
All other organelles
Describe and identify patterns in the hierarchal organization of organisms from atoms to molecules and cells to tissues to organs to organ systems to organisms.
Exclude:
Cell specialization</td><td>Essential Activity:
Hierarchy of Living Things pages 146-151
Comparing Plant and Animal Cells pages 155-161
Additional Resources:
6th grade Coach -
Lesson 21 pages 128-131</td><td>Cell theory
Organism
Unicellular
Multicellular
Plant cell
Animal cell
Organelles
Cell wall
Cell membrane
Cytoplasm
Nucleus
Chloroplast</td></tr>
</table>

Week 12 Week 13	<table><tr><th>Standards</th><th>Cognitive Level</th></tr><tr><td>SC.6.L.14.4</td><td>3</td></tr><tr><td>SC.6.L.14.5</td><td>2</td></tr></table>	Identify and investigate the general functions of ONLY the following major systems: digestive, respiratory, circulatory, reproductive, excretory, immune, muscular and musculoskeletal; and how they interact with each other to maintain homeostasis. Compare and contrast types of infectious agents that may infect the human body, including viruses, bacteria, fungi, and parasites. **Include:** ● General functions of body systems ● How they interact to maintain homeostasis. ● Infectious agents are limited to viruses, bacteria, and fungi. ● References to homeostasis are limited to organismal level. ● No more than 3 systems. **Exclude:** ● Structures and functions of individual organs in isolation. ● Knowledge of diseases and causal agents. ● Diagram of human reproductive system	**Essential Activity:** ● Build a Body pages 178-182 **Additional Resources:** ● 6th Grade Coach - ○ Lesson 24 pages 140-147 ○ Lesson 25 pages 148-151	Organs Organisms Organ system Tissue Epithelial Nervous Muscle Connective

<table>
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<td>Week 14</td>
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<tr><th>Standard</th><th>Cognitive Level</th></tr>
<tr><td>SC.6.L.14.1</td><td>1</td></tr>
<tr><td>SC.6.L.14.2</td><td>2</td></tr>
<tr><td>SC.8.L. 18.1</td><td>3</td></tr>
<tr><td>SC.8.L.18.2</td><td>3</td></tr>
</table>
</td>
<td>Describe and investigate the process of photosynthesis, such as the roles of light, carbon dioxide, water and chlorophyll; production of food; release of oxygen.

Describe and investigate how cellular respiration breaks down food to provide energy and releases carbon dioxide.

Exclude:
Stages
Interrelatedness of both photosynthesis and cellular respiration
ATP
Function of organelles related to the process
Anaerobic respiration</td>
<td>Textbook: Unit 7 Lesson 1(pages 411-425)

Essential Activity:
The Role Play is recommended for all students. The Light Intensity Lab is recommended for additional enrichment.
Photosynthesis Role Play Activity
Effect of Light Intensity on Photosynthesis
Additional Resources:
6th Grade Coach
Lesson 22 pages 128 - 135</td>
<td>Cell theory
Organism
Unicellular
Multicellular
Plant cell
Animal cell
Organelles
Cell wall
Cell membrane
Cytoplasm
Nucleus
Chloroplast
Photosynthesis
Cellular Respiration
Chlorophyll</td>
</tr>
<tr>
<td>Week 15</td>
<td>
<table>
<tr><th>Standard</th><th>Cognitive Level</th></tr>
<tr><td>SC.8.L. 18.3</td><td>3</td></tr>
</table>
</td>
<td>Construct a scientific model of the carbon cycle to show how matter and energy are continuously transferred within and between organisms and their physical environment.
Include:
Carbon reservoirs such as atmosphere, organisms, fossil fuels, sediments and oceans/water.
Exclude:
Nitrogen cycle</td>
<td>Textbook: Unit 7 Lesson 2 (pages 428-439)

Essential Activity:
Carbon Cycle Station Game pages 140-159
Greenhouse Gases in a Bottle pages 254-257</td>
<td>Carbon cycle
Fossil fuels</td>
</tr>
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<td colspan="4">District Common Assessment - Photosynthesis, Cellular Respiration and Carbon Cycle Test</td>
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<td>Week 16</td>
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<tr><th>Standard</th><th>Cognitive Level</th></tr>
<tr><td>SC.8.L.18.4</td><td>3</td></tr>
<tr><td>SC.7.L.17.2</td><td>2</td></tr>
<tr><td>SC.7.L. 17.3</td><td>3</td></tr>
</table>
</td>
<td>Cite evidence that living systems follow the Law of Conservation of Mass and Energy.

Investigate and describe the transformation of energy from one form to another.

Cite evidence to explain that energy cannot be created or destroyed, only changed from one form to another.

Include:
Food Webs (limited two primary, secondary and tertiary)
Energy Pyramids
Maximum of 5 energy transfers
Exclude:
Food chains
Term trophic level
Nuclear Energy
No calculations</td>
<td>Textbook: Unit 7 Lesson 2 (pages 428-439)

Florida Standards-Based Instruction Coach Grade 7 Investigation 2 “Describing a Food Web” pages 150-156.

Additional Resources:
Florida Standards-Based Instruction Coach Grade 7 Investigation 2 “Describing a Food Web” pages 150-156.
8th grade Coach-
Lesson 29 pg. 163-174
7th grade Coach-
Lesson 20 pg. 120-124
Gizmo-Prairie Ecosystem</td>
<td>Food Web
Primary
Secondary
Tertiary
Autotrophs
Heterotrophs</td>
</tr>
<tr>
<td>Week 17</td>
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<table>
<tr><th>Standard</th><th>Cognitive Level</th></tr>
<tr><td>SC.7.L.17.1</td><td>3</td></tr>
<tr><td>SC.7.L.17.2</td><td>2</td></tr>
<tr><td>SC.7.L. 17.3</td><td>3</td></tr>
</table>
</td>
<td>Explain and illustrate the roles of relationships among producers, consumers, and decomposers in the process of energy transfer in a food web.
Include:
Food Webs (limited to primary, secondary and tertiary)...with a maximum of 15 organisms
Exclude:
Food chains
Compare and contrast the relationships among organisms,</td>
<td>Essential Activity: (Choose 1)
Oh Deer Activity
https://www.troup.org/userfiles/929/My%20Files/Science/MS%20Science/7th%20Science/Ecology/flow_energy/food_web_game.pdf?id=23083
Everglades Biodiversity pages 182-191
Additional Resources:
https://www.youtube.com/watch?v=-oVavgmveyY
https://www.youtube.com/watch?v=ysa5OBhXz-Q
7th grade Coach-
Lesson 20 pg. 120-124</td>
<td>Autotrophs
Heterotrophs
Producers
Consumers
Decomposers
Symbiosis
Mutualism
Commensalism
Parasitism
Predation
Competition
Limiting factors</td>
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<tr><td></td><td></td><td>such as mutualism, predation, parasitism, competition and commensalism.

Include:
● Examples of each to be identified by the students.

Describe and investigate limiting factors in the local ecosystem and their impact on native populations, including food, shelter, water, space, disease, parasitism, predation, and nesting sites.</td><td>○ Lesson 21 pg. 125-128
○ Lesson 22 pg. 129-138
● https://www.youtube.com/watch?v=zSmL2F1t81Q

● Symbiosis PPT</td><td></td></tr>
<tr><td colspan="5">District Common Assessment - Ecology</td></tr>
<tr><td>Week 18</td><td></td><td>2nd Nine Weeks Wrap UP and Review
2nd Nine Weeks TEST</td><td></td><td></td></tr>
<tr><td>Week 19</td><td></td><td>WILD CARD WEEK</td><td></td><td></td></tr>
<tr><td>End of 2nd Quarter</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Week 20

Week 21

Week 22</td><td>3 weeks<table><tr><td>Standard</td><td>Cognitive Level</td></tr><tr><td>SC.8.E.5.9</td><td>3</td></tr></table></td><td>Explain the impact of objects in space on each other including:
1. The Sun on the Earth, including seasons and gravitational attraction.

2. The Moon on the Earth, including phases, tides, and eclipses and the relative position of each body.</td><td>Textbook: Unit 4, Lessons 1-3 (Pages 208-239)

Essential Activity:
● What Causes the Seasons pages 203-215
●

Additional Resources:
● 8th grade Coach-
○ Lesson 12 pg. 69-72
○ Lesson 13 pg. 73-76
○ Lesson 14 pg. 77-80
● Gizmo- 3D or 2D Eclipse</td><td>Seasons
Tilt
Axis
Solstice
New moon
Full moon
First quarter
Last quarter
Waxing
Waning</td></tr>
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<td></td>
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<td>Exclude:
Umbra and penumbra</td>
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https://www.youtube.com/watch?v=rVE8PFYlwSM
https://www.youtube.com/watch?v=OP0cpXpw8yk

https://www.flippedoutscience.com/unit-41-what-are-celestial-cycles.html
</td>
<td>Gibbous
Crescent
Spring tide
Neap Tide
High tide
Low tide</td>
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<td colspan="5">District Common Assessment – Sun, Moon and Earth District Assessment</td>
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<td>Week 23</td>
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<table>
<tr><th>Standard</th><th>Cognitive Level</th></tr>
<tr><td>SC.8.E.5.7</td><td>2</td></tr>
<tr><td>SC.8.E.5.4</td><td>3</td></tr>
<tr><td>SC.8.E.5.8</td><td>2</td></tr>
<tr><td>SC.6.E.7.9</td><td>2</td></tr>
<tr><td>SC.6.P.13.2</td><td>1</td></tr>
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<td>Compare and contrast the properties of objects in the Solar System, including the Sun, planets and moons to those of Earth, such as gravitational force, distance from Sun, speed, movement, temperature, and atmospheric conditions.

Explore the Law of Gravitation by explaining the role that gravity plays in the formation of planets, stars and solar systems and determining their motions.

Compare various historical models of the Solar System, including geocentric and heliocentric.

Describe how the composition and structure of the atmosphere protects life and insulates the planet.

Include:

Heliocentric and Geocentric models
Explain the role gravity plays in motion of planets, stars and solar systems

</td>
<td>Textbook: Unit 3, Lesson 1 & 2 (pages 116-141)

Essential Activities: (choose 1)

The Martian Sun-Times pages 183-194
Activity: Planet Walk (TPT Free Resource)
Scale of Our Universe Modeling Activity pages 160-171.

Additional Resources:

Size of the Universe 2 video 5:07 https://www.youtube.com/watch?v=i93Z7zljQ7I
8th grade Coach-

Lesson 11 pg. 64-68
Lesson 8 pg.52-55
Lesson 9 pg. 56-59

https://www.youtube.com/watch?v=pR5VJo5ifdE
https://s3.amazonaws.com/stationlabvideos/Comet%2C+asteroid+or+meteor.mp4

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Presence, absence or thickness of the atmosphere of planets.
Distance from Sun and length of year
Properties of specific planets but NOT inner and outer planets as groups.

Exclude:

Chemical composition of atmosphere of planets
Memorization of quantitative astronomical data.
Relative size of the Sun.

Relative distance of objects in our Solar System from the Sun.
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<tr>
<td colspan="5">District Common Assessment – Solar System District Assessment</td>
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<td>Week 24</td>
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<table>
<tr><th>Standard</th><th>Cognitive Level</th></tr>
<tr><td>SC.8.E.5.3</td><td>3</td></tr>
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<td>
Distinguish the hierarchical relationships between planets and other astronomical bodies relative to solar system, galaxy, and universe, including distance, size and composition.

Include:

General composition of bodies in the universe.
Distances between objects in space in the context of light and space travel.
Universe contains billions of galaxies and stars.
Planets, stars, moons, asteroids, nebulae, galaxies, dwarf planets, and comets.

</td>
<td>Textbook: Unit 3, Lessons 3 - 6 (Pages 142-197)</td>
<td>Planet
Star
Moon
Galaxy
Spiral galaxy
Irregular galaxy
Elliptical galaxy
Universe
Astronomical Unit
Light-year</td>
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Comparison of quantitative data, including tables.

Exclude:

Specific order of planets in isolation.
Memorization of quantitative astronomical data.
Specific chemical composition of astronomical bodies.

Will not need to calculate AUs.
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<td>Week 25</td>
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<tr><th>Standard</th><th>Cognitive Level</th></tr>
<tr><td>SC.8.E.5.5</td><td>2</td></tr>
<tr><td>SC.8.E.5.6</td><td>1</td></tr>
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<td>
Describe and classify specific physical properties of stars: apparent magnitude, temperature (color), size and luminosity (absolute brightness)
Include:

Focus on main sequence stars and their properties.
Absolute brightness will be used rather than luminosity.

Exclude:

Stellar evolution
Specific chemical composition of stars

Create models of solar properties, including rotation, structure of the Sun, convection, sunspots, solar flares, and prominences.
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Essential Activity:

http://www.mrsgeology.com/hertzsprung-russell-diagram/
Star Bright Apparent Magnitude Lab pages 172-178

Additional Resources:

Size of Stars:
https://www.youtube.com/watch?v=HEheh1BH34Q
8th grade Coach-

Lesson 16 pg. 91-95
Lesson 10 pg. 60-63

Gizmo-Star Spectra
Exit Ticket for Apparent and Absolute

</td>
<td>
HR Diagram
Main Sequence
Apparent Magnitude
Absolute Magnitude
Luminosity
Convection
Radiation
Sunspots
Solar Flare
Prominences
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<tr>
<td colspan="5">District Common Assessment - Universe and Stars</td>
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<td>Week 26</td>
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<tr><th>Standard</th><th>Cognitive Level</th></tr>
<tr><td>SC.7.P.10.1</td><td>1</td></tr>
<tr><td>SC.8.E.5.11</td><td>3</td></tr>
</table>
</td>
<td>Illustrate that the Sun’s energy arrives as radiation with a wide range of wavelengths, including infrared, visible, and ultraviolet, and that white light is made up of a spectrum of many different colors.
Include:
● Identify and compare and contrast the variety of types of radiation present in radiation from the Sun.
● Identify, compare and contrast characteristics of the EM spectrum.
● Identify common uses and/or applications of EM waves.
● Order of frequencies and wavelengths.
Exclude:
● Hazards of EM spectrum

Identify and compare characteristics of the electromagnetic spectrum, such as wavelength, frequency, use, and hazards, and recognize its application to an understanding of planetary images and satellite photographs.</td>
<td>Essential Activity:
● Mnemonic device and interactive notebook notes for RMIVUXG (Raging Martians Invade Venus Using X-Rays and Gamma)

Additional Resources:
● https://www.youtube.com/watch?v=cfXzwh3KadE
● Florida Standards-Based Instruction Coach Grade 7 Investigation 1 Exploring Light Interactions and Energy Transformations page 142-147.
● https://www.youtube.com/watch?v=GH5W6xEeY5U
● 7th Grade Coach
Lesson 11 pages 74-78</td>
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<td colspan="4">District Common Assessment – EM Spectrum Quiz</td>
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<td>Week 27</td>
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<table>
<tr><th>Standard</th><th>Cognitive Level</th></tr>
<tr><td>SC.6.E.7.1</td><td>2</td></tr>
<tr><td>SC.6.E.7.2</td><td>3</td></tr>
</table>
</td>
<td>Differentiate and show interactions among the geosphere, hydrosphere, cryosphere, atmosphere and biosphere.

Differentiate between weather and climate.</td>
<td>Essential Activity: (Choose 1)

● Heat Transfer pages 41-63 (multiple activities)
● Soil vs. Water...Which gets hotter?
● Modeling the Greenhouse Effect pages 69-78</td>
<td>Hydrosphere
Geosphere
Cryosphere
Atmosphere
Biosphere
Hurricane
Tornadoes</td>
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</table>

	SC.**6**.E.7.3 3 SC.6.E.7.4 3 SC.6.E.7.5 3 SC.**6**.E.7.6 2	Explain how energy provided by the Sun influences global patterns of atmospheric movement and the temperature differences between air, water and land. **Include:** ● Atmospheric conditions and the resulting phenomena. ● Effects of global warming ● Layers of atmosphere and function of each. ● Conduction, convection and radiation in Earth's systems ● Causes of wind and wind patterns **Exclude:** ● Aurora ● Causes of global warming ● Water cycle in isolation ● Coriolis effect	**Additional Resources:** ● 6th grade Coach- ○ Lesson 9 pg. 59-62 ○ Lesson 10 pg. 63-66 ○ Lesson 12 pg. 71-74 ○ Lesson 13 pg. 75-78 ● https://www.flippedoutscience.com/unit-32-earths-balance.html ●	Lightning Fronts Precipitation Convection Conduction Radiation Jet streams Wind direction Humidity Precipitation Weather Climate
District Common Assessment - Weather				
Week 28	Standard / Cognitive Level SC.7.E.6.2 3 SC.**7**.E.6.6 2	Describe the layers of the solid Earth, including the lithosphere, the hot convecting mantle, and the dense metallic liquid and solid cores. Explore the scientific theory of plate tectonics by describing how the movement of Earth's crustal plates causes both slow and rapid changes in Earth's surface, including volcanic eruptions, earthquakes and mountain building.	Review from 7th grade...choose one to implement based on students' needs. **Additional Resources:** ● 7th grade Coach- ○ Lesson 6 pg. 44-48 ○ Lesson 7 pg. 49-53 ● Tectonics Lab ● Crayon Rock Cycle Lab pages 118-125 ● Fossils and Law of Superposition pages 132-142 ● Moth Catcher pages 158-166	Tectonics Lithosphere Convection Mantle Inner core Outer core Transform boundary Divergent boundary Convergent boundary Volcanoes Earthquakes Glaciers Coastline Dunes

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<td>Identify current methods for the measuring the age of Earth and its parts, including the law of superposition and radioactive dating.

Explain and give examples of how physical evidence supports scientific theories that Earth has evolved over geologic time due to natural processes.

Include:
● Layers of the Earth
● Lithosphere
● Hot convecting mantle
● Dense metallic liquid and solid cores
● Density differences in layers of the Earth.
Exclude:
● Types of volcanoes
● Types of earthquake waves
● Calculations or address of half-life
● Knowledge or recognition of specific organism’s fossil records.
● Eras, periods or epochs</td>
<td></td>
<td>Rivers
Mountains
Deltas
Lakes</td>
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<td>Week 29</td>
<td>
<table>
<tr><th>Standard</th><th>Cognitive Level</th></tr>
<tr><td>SC.7.E.6.1</td><td>2</td></tr>
<tr><td>SC.7.E.6.2</td><td>3</td></tr>
<tr><td>SC.7.E.6.3</td><td>2</td></tr>
</table>
</td>
<td>Describe the layers of the solid Earth, including the lithosphere, the hot convecting mantle, and the dense metallic liquid and solid cores.

Explore the scientific theory of plate tectonics by describing how the movement of Earth’s crustal plates causes both slow and rapid changes</td>
<td>Essentials Labs:
● See above resources

Additional Resources:
● https://www.youtube.com/watch?v=R-Iak3Wvh9c</td>
<td>Weathering
Erosion
Chemical weathering
Physical weathering
Rock cycle
Sedimentary
Metamorphic
Igneous
Aquifers
Caverns</td>
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	<table><tr><td>SC.7.E.6.4</td><td>3</td></tr><tr><td>SC.7.E.6.5</td><td>2</td></tr><tr><td>SC.7.E.6.7</td><td>2</td></tr></table>	in Earth's surface, including volcanic eruptions, earthquakes and mountain building. Identify current methods for the measuring the age of Earth and its parts, including the law of superposition and radioactive dating. Explain and give examples of how physical evidence supports scientific theories that Earth has evolved over geologic time due to natural processes. **Include:** ● Layers of the Earth ● Lithosphere ● Hot convecting mantle ● Dense metallic liquid and solid cores ● Density differences in layers of the Earth. **Exclude:** ● Types of volcanoes ● Types of earthquake waves ● Calculations or address of half-life ● Knowledge or recognition of specific organism's fossil records. ● Eras, periods or epochs. Identify patterns within the rock cycle and relate them to surface events (weathering and erosion) Identify the impact that humans have had on the Earth, such as		Sinkholes Deforestation Urbanization Desertification

		deforestation, urbanization, desertification, erosion, air and water quality, and changing the flow of water. **Include:** ● Steps of rock cycle ● Physical and chemical weathering ● Identify different types of landforms found on Earth and as it relates to Florida. ● Impact that humans have had on Earth.		
District Common Assessment - Rocks and Plates and Human Impact				
Week 30		Recognize that fossil evidence is consistent with the scientific theory of evolution that living things evolved from earlier species. **Include:** ● Fossil evidence being consistent with theory of evolution ● Focus on progression over time from earlier species and/or the idea that not all species alive today were alive in the past. **Exclude:** ● Hominoid evolution or primate fossils ● Relative dating Explore the scientific theory of evolution by recognizing and explaining ways in which genetic variation and environmental factors contribute to evolution by natural selection and diversity of organisms. **Include:** ● Environmental factors	**Essential Activity:** ● Birds' Beaks Adaptation **Additional Resources:** ● 7th grade Coach- Lesson 15	

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<tr><td></td><td></td><td>Explore the scientific theory of evolution by relating how the inability of a species to adapt within a changing environment may contribute to the extinction of that species.</td><td></td><td></td></tr>
<tr><td colspan="5">District Common Assessment – Fossil Quiz</td></tr>
<tr><td>End of 3rd Quarter</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Week 31</td><td>
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<tr><th>Standard</th><th>Cognitive Level</th></tr>
<tr><td>SC.7.L.15.1</td><td>2</td></tr>
<tr><td>SC.7.L.15.2</td><td>3</td></tr>
<tr><td>SC.7.L. 15.3</td><td>3</td></tr>
<tr><td>SC.7.L.16.1</td><td>3</td></tr>
<tr><td>SC.7.L.16.2</td><td>2</td></tr>
</table>
</td><td>Understand and explain that every organism requires a set of instructions that specifies its traits, that this hereditary information (DNA) contains genes located in the chromosomes of each cell, and that hereditary is the passage of these instructions from one generation to another.

Determine the probabilities for genotype and phenotype combinations using Punnett Squares and pedigrees.

Compare and contrast the general process of sexual reproduction requiring meiosis and asexual reproduction requires mitosis.

Include:
Punnett squares and pedigrees will only address dominant and recess traits
Single individual genotype and phenotype only
Punnett squares are limited to P and F1 generations.
Excludes:
Terms haploid and diploid
Human reproduction</td><td>Additional Resources:
http://www.usmgk12.org/documents/M&M_Reproduction.pdf This lab will discuss reproduction as well as environmental factors that will cause species to die out.
Imaginary Alien Life Forms pages 258-262
GMOs Offspring pages 205-213
7th grade Coach-
Lesson 15 pg.100-103
Lesson 16 pg. 104-107
Lesson 17 pg. 108-110</td><td>DNA
Chromosomes
Punnett square
Genotype
Phenotype
Probability
Traits
Dominant
Recessive
Meiosis
Mitosis</td></tr>
</table>

		• Incomplete dominance/sex-linked traits, polygenic traits, multiple alleles, codominance • Mutations • Stages of meiosis, fertilization or zygote formation.		
District Common Assessment – Heredity and Genetics				
Week 32		Analyze and describe how and why organisms are classified according to share characteristics, with emphasis on Linnaean system combined with the concept of Domain. **Include:** • How characteristics are used to classify organisms. • The following domains: Bacteria, Archaea and Eukarya. • The following kingdoms: Protist, Fungus, Plant and Animal. • Hierarchy of classification. **Exclude:** • Specific organisms' scientific and common name. • Specific characteristics of individual types of organisms. • Specific characteristics of organisms classified in a particular phylum, class, order, family, genus or species.	**Essential Activity:** • https://www.shapeoflife.org/sites/default/files/SoL-Lesson-Classification-comm.pdf • Classifying Pests pages 162-173 **Additional Resources:** • 6th Grade Coach ○ Lesson 26 pages 152-157	Kingdom Phylum Class Genus Order Species Bacteria Archaea Eukarya Domain Kingdom
District Common Assessment – Classification				

Week 33	<table><tr><th>Standard</th><th>Cognitive Level</th></tr><tr><td>SC.**6**.P.12.1</td><td>3</td></tr><tr><td>SC.**6**.P.13.3</td><td>2</td></tr></table>	**Wrap up and Review for FSA** Measure and graph distance versus time for an object moving at a constant speed. Interpret this relationship. Investigate and describe that an unbalanced force acting on an object changes its speed, or direction of motion, or both. **Include:** ● Interpretation and analysis of a graph will include relative speed of an object at various points or sections of the graph and the direction of motion. ● Calculation of net force. ● Direction of net force. ● Conceptual understanding ● Changes in speed as positive or negative acceleration. ● Friction as a force in both sliding and stationary. **Exclude:** ● Comparison of speeds of more than 5 objects. ● Addition of nonparallel vectors ● Not requires calculation of acceleration. ● Not require use of formula *f=ma.* ● Coefficient of friction. ● Will not imply that a calculation is required.	**Essential Activity:** ● Rocket Cars pages 104-121 ● May the Force be With You pages 122-128	Positive acceleration Negative acceleration

Week 34		Wrap up and More Review FSA TEST THIS WEEK		
Week 35		**WILD CARD WEEK**		
Week 36		Last Week of School		